Ontario

CERTIFICATION GUIDE FOR OPERATORS AND WATER QUALITY ANALYSTS OF DRINKING WATER SYSTEMS

Certification of Drinking-Water System Operators and Water Quality Analysts Regulation, O. Reg. 128/04

August 1, 2004

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1 Introduction

1.1 *Purpose of Certification Guide*

This certification guide provides information on the requirements to secure and renew a drinking water operator and water quality analyst certificate. It reflects the new Certification of Drinking-Water System Operators and Water Quality Analysts regulation, O. Reg. 128/04, made under the *Safe Drinking Water Act, 2002*. It replaces O. Reg. 435/93, made under the *Ontario Water Resources Act*, and its corresponding program guide.

This certification guide is provided for information purposes only. Where there is a discrepancy between this program guide and O. Reg. 128/04, the regulation prevails. Owners, operating authorities, operators and water quality analysts should refer to O. Reg. 128/04 and the SDWA for a complete understanding of their legal responsibilities, and certification compliance requirements.

1.2 *Certification Program Is Administered by a Third Party*

The operator/water quality analyst certification program is administered by a third party under contract with the Ministry. Presently the third party is the Ontario Environmental Training Consortium (OETC).

Among other things the Certification Administrator processes certificate and certificate renewal applications, processes exam applications, co-ordinates and marks exams, notifies operators of the need to renew their certificate, sells exam study guides, informs operators on continuing education courses that meet the necessary criteria, and provides information to operators.

Details on how to contact the OETC is provided in section 11 of this guide.

1.3 *Separate Guide to Completing Certification Forms*

Supplementary to this certification guide is a 'Guide to Completing MOE Certification Forms', which can be found on the Web site of the Certification Administrator. The guide to completing forms contains a list of all the forms related to municipal subsystem classification and operator certification and certificate renewal, and provides instructions on when and how to complete specific forms. (The forms can also be found on this Web site).

1.4 *Separate Wastewater Operator Licensing Program Guide*

The ministry developed a separate 'Licensing of Sewage Works Operators' regulation, O. Reg. 129/04 made under the *Ontario Water Resources Act*, which consolidates the existing wastewater provisions under O. Reg. 435/93. A separate program guide for the licensing of wastewater operators will be available in the Fall of 2004. Until then, wastewater operators can refer to the program guide reflecting O. Reg. 435/93.

1.5 *Tips on Reading this Guide*

O. Reg. 128/04 came into effect August 1, 2004. However, some provisions come into effect August 1, 2005 as listed in section 1.5 below, and noted throughout this guide.

The reference to Director throughout the regulation is reference to a person or persons appointed by the Minister of the Environment as having the authority to make such decisions. The 'Director' under O. Reg. 128/04 and O. Reg. 129/04 is the director of the Education and Outreach Branch, Drinking Water Management Division, Ministry of the Environment.

The meaning of key terms used in this guide are set out in shaded text within the section in which the term is used. For exact legal definitions of terms please refer to the relevant regulations and the *Safe Drinking Water Act, 2002.*

Policy that supplements O. Reg. 128/04 is contained in separate Guidelines, and can be obtained from the Certification Administration Office (see section 11 of this guide for contact information). However in some instances part of the policy has been included in this guide, in boxes within the relevant section.

1.6 *'Mandatory' and 'Entry-Level' Courses*

Two courses are mentioned in the guide: the mandatory course and the entry-level course. Both courses will be developed by the ministry prior to August 1, 2005, when the requirements to which they relate come into effect. The 'mandatory' course will cover subjects suggested by Justice O'Connor such as information on emerging pathogens, risks to public health of improper monitoring and treatment, importance of regulation, and current treatment processes. The 'entry-level' course addresses Justice O'Connor's recommendation that entry level operators be required to take a course.

1.7 *Background*

Certification of drinking water operators in Ontario began in 1987 as a voluntary program. Certification became regulated in 1994 through O. Reg. 435/93 made under the *Ontario Water Resources Act.*

The certification program establishes professional standards for operators and water quality analysts. It is also intended to give greater assurance of safe drinking water to the residents of Ontario through ensuring that operators have the education, experience and knowledge to perform their responsibilities effectively.

Both the voluntary and regulated program, when introduced, provided for 'grandparenting' of operators. This allowed an existing operator who satisfied the experience requirements to receive a licence without writing the certification exam or satisfying the education requirements. Operators grandparented under O. Reg. 435/93 were required to pass a certification exam three years from being grandparented in order to renew their licence. Failure to do so resulted in their licence being lowered by one level. (Class I operator licences were not lowered).

1.7.1 Justice O'Connor Recommendations

Justice O'Connor was appointed to lead an inquiry into the causes of water contamination in Walkerton, and to make recommendations on how to avoid such an event. In his *Part One Report of the Walkerton Inquiry, The Events of May 2000 and Related Issues*, and his *Part Two Report of the Walkerton Inquiry, A Strategy for Safe Drinking Water*, Justice O'Connor made several recommendations for increasing the safety of drinking water. In response, the government implemented the *Safe Drinking Water Act, 2002*, (SDWA), and supporting regulations including the Drinking Water Systems Regulation, O. Reg. 170/03, and the Drinking Water Testing Services Regulation, O. Reg. 248/03.

Ten of Justice O'Connor's recommendations related to strengthening the certification and training of operators of drinking water systems, and can be grouped into four key changes:

- re-certify 'grandparented' operators through examination within two years
- develop an entry level course for new operators
- strengthen certification and training requirements for operators through:
  - consolidating current hours of training and hours proposed in August 2000 into a single integrated program
  - improve definition of training, and
  - have certificate renewal conditional on completing such training.
- Take measures to ensure courses are accessible, particularly for rural and remote operators.

To address these recommendations[1], the government implemented O. Reg. 128/04. In developing this regulation, the ministry consulted with the water industry on various occasions,

[1] Justice O'Connor's recommendations on operator certification and training are numbers 20, 21, 22, and 23 from Part I, and 50, 60, 61, 62, 63 and 64 from Part II. The two recommendations related to increasing access to courses are being addressed as part of a longer term strategy.

and considered comments received on the draft regulation that was posted on the environmental registry

1.8 *Key Program Changes Resulting from O. Reg. 128/04*

O. Reg. 128/04 replaces O. Reg. 435/93, and introduces changes to the former drinking water certification program. The key changes are as follows:

- Grandparented operators must pass a certification examination by May 14, 2006 in order to remain certified. Grandparented operators who are "overall responsible operators" must pass a certification exam by May 14, 2005 in order to remain overall responsible operators.

- New types of subsystems have been created, as well as corresponding operator certificates.

- Certificate renewal will be conditional on meeting specific training requirements. The hours of training operators are required to take each year are graduated from 20 hours for more simple systems to 50 hours for more complex systems. Training is clearly defined and includes continuing education and on-the-job practical training. Training will also include a mandatory course specified by the ministry. (*Effective August 1, 2005)*

- Certificate renewal is tied to having at least 3 months of operator or related experience within the past 3 years

- Operators-in-training must complete a specific entry level course of study within 16 months or their certificate expires. (*Effective August 1, 2005*)

- OIT certificates expire within three years. Operators must secure a Class I certificate if they wish to remain certified.

- Water quality analysts must meet strengthened requirements in order to be certified and recertified.

- If a certificate has been expired over one year, the operator must write the certification exam.

- A fee will be charged for late renewal of certificates.

- Professional engineers must meet the standard experience requirement in order to secure an operator certificate in addition to other qualifying requirements. The exam pass rate for professional engineers is the same as for operators.

- Professional engineers without an operator certificate cannot be designated as overall-responsible operator.

- Fees, formerly set in regulation, are now set through Minister's Order.

1.9 *When Various Provisions under O. Reg. 128/04 Come Into Effect*

1.9.1 Re-Certification of Grandparented Operators

The two-year period for grandparented operators to be re-certified through exam started the day the regulation was filed, namely May 14, 2004, as provided for under the SDWA.

1.9.2 O. Reg. 128/04

O. Reg. 128/04 came into effect August 1, 2004. However, the following provisions come into effect August 1, 2005:

- New annual training requirements for operators and water quality analysts tied to certificate renewal
- Requirement that operators-in-training take entry level course of study within 16 months of receiving their OIT certificate
- Requirement that applicant take a Director approved course of study in order to qualify for a limited system operator certificate
- Requirement that applicant take entry level course of study to qualify for Class I certificate
- Requirement that an applicant take Director approved training to qualify for water quality analyst certificate. (Water quality analyst qualifications presently require training that meets specific criteria, but is not specifically Director approved).

2 Systems and Subsystems

2.1 *System Categories Governed by O. Reg. 128/04*

Section 12 (1) under the SDWA provides that no person shall operate a municipal drinking-water system or a regulated non-municipal drinking-water system unless the person holds a valid operator's certificate issued in accordance with the regulations.

The Drinking-Water Systems Regulation, O. Reg. 170/03, identifies the regulated non-municipal system categories that require a certified operator. Thus the following five system categories, (please see O. Reg. 170/03 for their definition), require a certified operator and therefore are governed by O. Reg. 128/04:

- large municipal residential
- small municipal residential
- large municipal non-residential
- large non-municipal non-residential
- non-municipal year round residential

O. Reg. 128/04 does not apply to system categories requiring a trained person[2], which are the remaining three categories under O. Reg. 170/03, namely:

- non-municipal seasonal residential
- small non-municipal non-residential
- small municipal non-residential.

The following table is a summary of the system categories that require a certified operator or a trained person:

Table 1

System Category	Requirement
large municipal residential small municipal residential	certified operator
large municipal non-residential large non-municipal non-residential non-municipal year round residential	certified operator
non-municipal seasonal residential small non-municipal non-residential small municipal non-residential	trained person

For a full description of each system category, please refer to O. Reg. 170/03.

This guide only applies to those systems that require a certified operator. Thus the balance of this guide focuses on the first five system categories.

2.2 *New Drinking Water System Types Made Under O. Reg. 128/04*

For the purpose of operator certification, the five system categories that require a certified operator have been divided under O. Reg. 128/04 into two system types:

- **municipal residential systems**, and
- **limited systems**.

2.2.1 Municipal Residential Systems

Under O. Reg. 128/04 municipal residential systems include the following system categories defined in O. Reg. 170/03:

- ✓ large municipal residential, and
- ✓ small municipal residential – surface water only.

Municipal residential systems are divided into three types of subsystems, with each having four classification levels as follows:

- water distribution subsystem – Classes I to IV

[2] A 'trained person' is defined in O. Reg. 170/03 as an individual who holds an operator certificate under O. Reg. 128/04, or a person who, in the preceding 36 months, successfully completed a Director approved course. A list of the 'Director approved' courses for a trained person can be obtained from the office of the Certification Administrator.

- water distribution and supply subsystem – Classes I to IV
- water treatment subsystem – Classes I to IV.

A **distribution subsystem** is a municipal residential drinking-water system that supplies and distributes water but does not include that part of the water system that collects, produces or treats water.

A **distribution subsystem** includes a subsystem that:
- provides secondary disinfection (i.e. booster chlorination – meaning to add chlorine to treated water received from another subsystem, because there was no chlorine residual evident)
- disinfects[3] after performing maintenance or making a repair.

A **distribution and supply subsystem** is a municipal residential drinking water groundwater system that distributes and treats water, where the treatment is limited to disinfection. It does not include a system deemed to have source water under the direct influence of surface water, otherwise referred to as a GUDI system. (See section 2 of O. Reg. 170/03 for description of a GUDI).

A **distribution and supply subsystem** includes groundwater systems:
- with primary disinfection using chlorination, UV or ozonation,
- that involve adjustments such as pH control or iron/manganese sequestering, and
- that involve adjustments for stability or corrosion control.

The **distribution and supply subsystem** was created to enable operators to write exams more applicable to what they need to know to effectively operate the system in which they work.

A **water treatment subsystem** is a municipal residential subsystem that collects, produces or treats water, but does not include that part of the drinking-water system that is a distribution or distribution and supply subsystem.

A **treatment subsystem** includes any system that provides fluoridation, filtration, or any other treatment. A treatment system includes all systems deemed to be GUDI as described under section 2 of O. Reg. 170/03 , including GUDI systems with 'in-situ' filtration.

[3] Such 'disinfection' refers to the process in a distribution system, where, after performing a maintenance function on the system such as repair a watermain break or replace a valve, the new equipment is chlorinated before being put into operation. The line receiving such chlorination is cleared at the next hydrant.

Figure 1: Separate Water Treatment and Water Distribution Systems

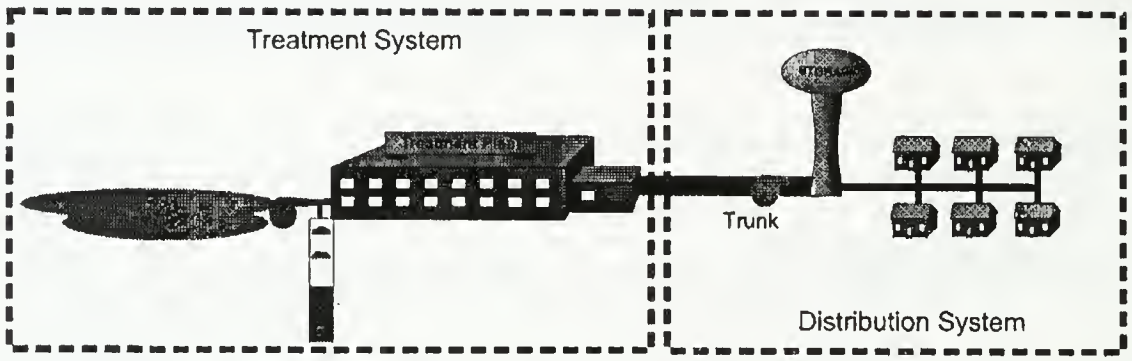
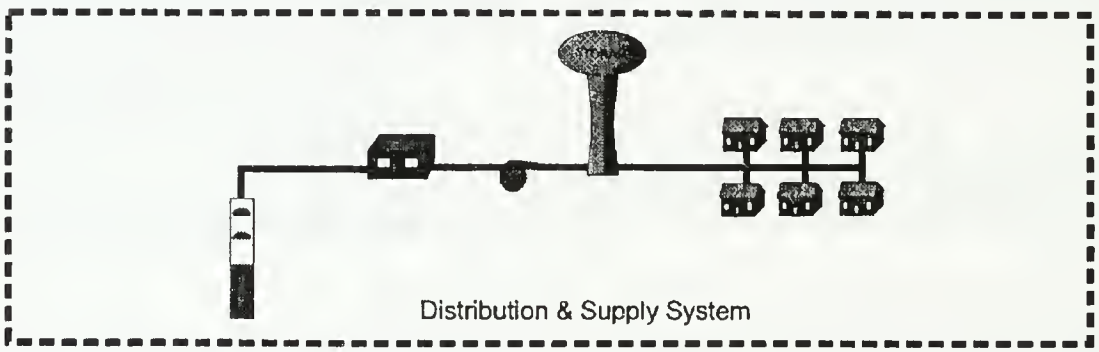


Figure 2: Water Distribution and Supply System (Disinfection Only)



2.2.2 Limited Systems

Limited systems include the following system categories as defined in O. Reg. 170/03:

- ✓ small municipal residential – ground water only
- ✓ large municipal non-residential
- ✓ Non-municipal year-round residential, and
- ✓ large non-municipal non-residential.

For each of these there are two types of subsystems:

- **limited surface water subsystem**, and
- **limited groundwater subsystem**.

A **limited surface water subsystem** is a system where the raw water supply is surface water. It would include a system deemed to be under the direct influence of surface water, otherwise referred to as a GUDI system as described under section 2 of O. Reg. 170/03.

A **limited groundwater subsystem** is one where the raw water is groundwater. It does not include a system deemed to be a GUDI system.

2.2.3 Summary of New System Types

The following chart summarizes the above discussion of the different system types and their subsystems:

Table 2

System Category from O. Reg. 170/03	System Type under O. Reg. 128/04	Subsystem Type under O. Reg. 128/04
Large Municipal Residential	Municipal Residential	• Distribution – Classes I to IV • Distribution and Supply – Classes I to IV • Treatment – Classes I to IV
Small Municipal Residential: **– surface water or GUDI**	Municipal Residential	• Distribution – Classes I to IV • Distribution and Supply – Classes I to IV • Treatment – Classes I to IV
– ground water	Limited	• Limited Groundwater
Large Municipal Non-Residential	Limited	• Limited Surface Water • Limited Groundwater
Non Municipal Year Round Residential	Limited	• Limited Surface Water • Limited Groundwater
Large Non- Municipal Non-Residential	Limited	• Limited Surface Water • Limited Groundwater

3 System Classification

3.1 *Overview*

Systems are required to be operated by persons holding a valid operator's certificate of the same type as the type of subsystem. For **municipal residential systems** at least one operator must hold a certificate of the same class or higher than the class of subsystem.

Only municipal residential systems are classified, since they cover a range of different subsystem types and sizes. Classification determines their operating complexity, with a higher class assigned as the complexity increases.

Limited systems are not classified as they have only one level for surface and groundwater respectively. Owners determine whether or not they own a limited system based on the categories and definitions provided in O. Reg. 170/03.

3.1.1 Classification of Municipal Residential Systems

The owner of a new municipal residential subsystem must file an application with the Director to have the classification of their subsystem determined. Subsystems are classified by assigning classification points for subsystem characteristics in the Tables found in Schedule 1 of O. Reg. 128/04[4].

Municipal systems will receive a classification reflecting the type of subsystem, and a class as per Table 2 above. The class reflects the operational complexity, with the higher classes reflecting greater operational complexity (for example, a municipal system may bear the classification of a 'distribution and supply subsystem Class II').

The owner must ensure that the certificate of classification is conspicuously displayed at the subsystem or, if this is not practical (e.g. at some distribution systems), the certificate should be displayed at the premises from which the subsystem is managed.

3.1.2 Re-classification of Municipal Subsystems

If the subsystem is altered or no longer meets the criteria under which it was originally classified, the owner must apply to have the classification re-determined.

An owner needs to apply for reclassification each time they seek approval for an amendment to their drinking water works permit under the SDWA (subsection 3 (3) of the SDWA)[5].

Further, the Director may request that a subsystem have their classification re-determined if the classification points in Schedule 1 of the regulation have been amended, or the Director is of the opinion that the subsystem or group of subsystems no longer meets their original classification.

3.1.3 Existing System Certificates of Classification

System owners holding a valid water distribution certificate of classification on August 1, 2004, the day O. Reg. 128/04 comes into effect, are deemed to hold a valid distribution and supply subsystem classification under O. Reg. 128/04 until the earlier of August 1, 2005, or the day that their system classification is re-determined.

System owners holding a valid water treatment certificate of classification on August 1, 2004, are deemed to hold a water treatment subsystem certificate of classification under O. Reg. 128/04 until the earlier of August 1, 2005 or the day that their system classification has been re-determined.

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[4] Minor changes were made to the classification points in O. Reg. 435/93 to reflect that a) some tests formerly done by water system are now done by an accredited laboratory; b) turbidity and chlorine residual testing are now mandatory; and c) reduced points for distribution systems that only provide disinfection (20 points reduced to 5 points for these systems).

[5] Note: if it is clear that an alteration that would fall under section 3 (3) of the SDWA will not affect the classification points in Schedule 1 of O. Reg. 128/04, then the owner should not apply for a reclassification.

4 Certification of Operators

4.1 *Overview*

As mentioned above, Section 12 (1) of the SDWA requires that only persons holding a valid operator's certificate can operate a municipal system or a regulated non-municipal system.

'Operating' functions are those functions typically performed by an operator as described in the definition of 'operator' below.

This includes a maintenance worker, a laboratory technician, or other employee who is 'on call', and is expected to perform operating functions when 'called out' to do so.

4.1.1 Functions that Must be Performed by a Certified Operator

An operator is defined by the functions they perform, not by the job title, union affiliation, or whether or not they are in a supervisory or management position.

An **operator** means a person who conducts operational checks of or who adjusts, tests, or evaluates a process that controls the effectiveness or efficiency of a subsystem and includes a person who adjusts or directs the flow, pressure or quality of water within the subsystem, if that person works in a 'distribution subsystem' or a 'distribution and supply subsystem'.

> Under O. Reg. 128/04, an 'operator' includes an operator-in-training.

O. Reg. 170/03, Schedules 1, 2, 6, 7 and 8 provide that the following must be done by a certified operator for system categories that require a certified operator (please refer to O. Reg. 170/03 for exact wording):

- take appropriate action in response to a disinfection equipment alarm
- take adjustments to the water treatment equipment
- examine test results of continuous monitoring equipment within 72 hours
- conduct tests for maintenance and operational checks
- comply with:
  a. the required maintenance schedule or, where this is not available, the manufacturer's instructions re: checking or maintaining water treatment equipment
  b. if (a) is not applicable, in the case of a system providing chlorination or chloramination, at least weekly check to confirm proper functioning. For other systems, water treatment equipment is to be checked at least every 3 months to confirm proper functioning.

Further, under the Drinking Water Testing Services regulation, O. Reg. 248/03, an operator is considered a 'qualified' person for the purpose of conducting water tests[6], and therefore can test for the 24 operational parameters listed under O. Reg. 248/03 (e.g. testing for chlorine residual, turbidity, alkalinity, pH). (Any other water test (analysis) prescribed by O. Reg. 170/03 must be done by a person or laboratory holding a 'drinking water testing services' licence issued by the ministry).

A person must be certified as an operator in order to perform the following functions (also referred to as 'operating' functions):

- control flow or pressure of drinking water in drinking water subsystems
- disinfect or treat water using chemicals and/or through making adjustments to treatment equipment
- monitor gauges, meters and control valves related to disinfection, treatment or distribution of drinking water
- conduct water tests for the 24 operational parameters listed under O. Reg. 248/03 (e.g. testing for chlorine residual, turbidity, alkalinity, pH)
- start and stop pumps, engines and generators to control and adjust flow and treatment
- open and close valves and gates, whether done manually or by remote control (a non-certified person can open and close valves for the purpose of 'exercising' a valve)
- add chlorine or other chemicals to the 'distribution' or 'distribution and supply' subsystem
- perform 'wet-taps'
- flush hydrants
- isolate watermains and reconnect isolated watermains
- maintain logs (e.g. shift logs) or other forms of record-keeping related to treatment and distribution activities in the subsystem, make entries into such logs/records including meter and gauge readings

A person does not need to be certified to perform the following functions:

- repair previously isolated watermains
- install or do maintenance on a service meter or perform work on a service line that is covered under the Building Code
- close a watermain valve as a result of an emergency (i.e. watermain break) if approved by a certified operator (if not an emergency, this must be done by a certified operator)
- operate (close/open/adjust) a curb stop at the property line which controls the flow of water to a service
- take water for fire fighting purposes

[6] A person does not need to be certified to take a water sample, which is a different function than conducting a water test (i.e. analysis).

- perform 'dry taps'
- open or close hydrants for non-operational purposes such as the taking of water by the municipality[7]. (The expectation is that a certified operator with responsibility for the system has been consulted prior to such taking of water).

A person or contractor, that is not certified as a drinking water operator, can perform functions normally required to be done by a certified operator provided they are being directly supervised by a certified operator, meaning the certified operator is physically present and monitoring the work being performed.

4.1.2 Types of operator certificates

Operator certificates correspond to the types of subsystems.

Thus, there are three types of **municipal residential system** operator certificates, with each having four classes of operator certificates, as follows:

- distribution operator certificate – Class I to IV
- distribution and supply operator certificate – Class I to IV
- treatment operator certificate – Class I to IV

There is also an operator-in-training certificate for each of the municipal residential subsystem types.

There are two types of **limited system** operator certificates:

- limited surface water operator certificate, and
- limited groundwater operator certificate

There is no operator-in-training certificate for limited systems.

4.2 *Certificate Qualifications - Operators-In-Training*

An operator-in-training (OIT) certificate allows new operators to gain the one-year experience required in order to become a Class I operator.

To secure an OIT certificate a person must:

- successfully complete grade 12 or equivalent
- pass an OIT or Class I exam.

An OIT certificate issued before August 1, 2005 will be issued for three years.

An OIT certificate issued on or after August 1, 2005 expires 16 months after it was issued, unless the OIT completes the **entry level course,** described in section 1.6 of this guide, within the 16

[7] The ministry's compliance role is in relation to functions that affect the quality of water. It does not extend to the end use of the water.

months. If the OIT completes the entry level course within the 16 months, their certificate will be extended to three years from the date it was originally issued[8].

If an applicant has successfully completed the entry level course at the time they apply for an OIT certificate, and provided they have grade 12 and pass the OIT exam, they will be issued a certificate for three years.

OITs who let their certificate expire at 16 months must take the course of study and pass an exam in order to obtain a new OIT certificate.

4.2.1 OITs are encouraged to secure Class I certificate

OIT certificates expire at the end of three years from the date it was originally issued. To remain certified, the OIT needs to secure a Class I certificate.

The Director may renew an OIT certificate for an additional three years if the OIT has passed the entry level course but was unable to obtain the one year of experience required for a Class I certificate. Examples of when this may apply are for a part-time operator, or an operator who was absent for an extended period.

O. Reg. 128/04 provides for the phasing in of certificate expiry for existing OITs. Operators holding OIC certificates as of July 31, 2004, will have their certificates renewed as follows:

Table 3

OIT certificate expires:	Renewed to:
between August 1, 2004 and July 31, 2006	August 1, 2006, when it expires
between August 1, 2006 and July 31, 2007	August 1, 2007, when it expires

4.2.2 Temporary OIT Certificates *(Effective August 1, 2005)*

An individual who works as an OIT for no more than four consecutive months in a seven-month period is exempt from having to take the course of study. To secure this temporary OIT certificate the individual must successfully complete grade 12 and pass the specific exam.

The temporary OIT certificate issued under these circumstances will expire after 12 months. To regain a certificate, the individual must pass the specific exam and take the **mandatory** course described in section 1.6 of this guide. Such temporary OIT certificate will be issued only four times.

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[8] The Director has the discretion to extend the 16 months by another six months, if the Director is satisfied that the OIT will complete the course of study by the end of the additional six months. At the end of the 6 months, if the course is completed, the OIT certificate is extended to three years from the date it was originally issued. The Director will exercise this discretion in limited circumstances e.g. an OIT is ill or away for an extended period of time.

This temporary OIT certification provision enables an owner or operating authority to employ summer students.

4.3 *Certificate Qualifications – Limited System & Class I to IV Municipal*

The Director will issue an operator's certificate provided the applicant meets all of the qualifications for the specific certificate applied for, and pays the required fee.

To qualify for an operator's certificate, a person must meet requirements related to:
- ✓ education and training
- ✓ experience
- ✓ passing an exam.

The higher the level of certificate, the more education and experience required. The experience must be gained in the type of municipal residential subsystem corresponding to the certificate for which the individual is applying. For example, if the applicant is applying for a treatment certificate, the person must have experience in a treatment subsystem. (See Note 6 to Table 4 below for exceptions).

To secure a drinking-water operator's certificate, professional engineers must meet the same qualifications as operators. They also have the same exam pass standard.

> **Operating**[9] experience is experience performing the functions described in section 4.1.1 of this guide. The exception is if the sole function performed by the person is that of conducting water tests – in this case such function will not be considered as meeting operating experience. (*Note: operating experience is also referred to as* ***'hands-on'*** *experience)*

The certificate qualifications for each type and class of certificate are summarized in the following table (also see Notes to Table immediately following the table).

[9] A description of what constitutes **related** and **different** experience will be available in a Ministry of the Environment guideline in the near future.

Table 4

Certificate	Education/ Training *(also see Notes 1, 3 & 4)*	Experience *(also see Notes 2,5,6 & 7)*	Exam	Other (*also see Note 9)*
OIT	Grade 12 or equivalent. Within 16 months must complete entry level course (*effective August 1, 2005*)	N/A	OIT or Class I	Exempt from taking entry level course for persons who qualify for temporary OIT certificate
Class I	Grade 12 or equivalent. Must have completed entry level course of study (*OITs with certificate before August 1, 2005 are not required to have completed course)*	1 year as an OIT. Notes 4, 5 & 6 do not apply to Class I certificates	Class I exam	Experience must be 'operating' experience –see definition above
Class II	Grade 12 or equivalent.	3 years	Class II exam	Must hold a Class I certificate for that type of municipal residential subsystem
Class III	Grade 12 or equivalent + 2 years of additional education or training the Director considers relevant	4 years, of which 2 years must be as an OIC in a Class II, III or IV system	Class III exam	Must hold a Class II certificate for that type of municipal residential subsystem
Class IV	Grade 12 or equivalent + 4 years of additional education or training the Director considers relevant	4 years, of which 2 years must be as an OIC in a Class III or IV system	Class IV exam	Must hold a Class III certificate for that type of municipal residential subsystem
Limited Surface	Grade 12 or equivalent. (*See Note 8 for exception*) As of August 1, 2005, also successfully complete Director approved course	N/A	Limited Surface Subsystem exam	
Limited Ground-water	Grade 12 or equivalent (*See Note 8 for exception*). As of August 1, 2005, also successfully complete Director approved course	N/A	Limited Ground-water Subsystem exam	

Notes to Table:

1. Grade 12 equivalency is generally that described in the box immediately following. For a detailed description, please refer to the ministry's guideline.

> The following is considered equivalent to having secured grade 12:
> - securing the General Educational Development (GED) certificate
> - a 2-3 year certificate or 3-4 year diploma from a recognized Canadian university or community college (*a certificate or diploma from a business school, design academy, or computer school are not on their own considered grade 12 equivalent, but may be considered together with other qualifications such as the high school grade level completed, other continuing education or training secured)*
> - grade 12 or the GED from other provinces (CEJEP from Quebec) and the US will be considered equivalent
> - experience from other countries may be considered as Grade 12 equivalent (contact the Certification Administrator for details – see section 11 for contact information).

2. Only experience gained while certified to do the work will be considered.

3. For the purpose of calculating education or training obtained through continuing education, 450 hours of education or training equals one year. This translates into 45 Continuing Education Units (CEU), since 1 CEU equals 10 hours of training.

4. Substitute experience for education/training:
   a. Class III applicants may substitute up to one year experience as an operator-in-charge in a Class II, III or IV subsystem, above that required to meet the experience qualifications, for one year of education/training (or 450 hours of additional education/training.
   b. Class IV applicants may substitute up to two years of experience as an operator-in-charge in a Class III or IV subsystem, above that required to meet the experience qualifications, for the two years of additional education/training.

5. Substitute education/training for experience: Class II, III and IV applicants can substitute education & training (except for elementary and secondary education), above that required to meet the additional education and training qualifications for up to 50% of the required operating experience.

> Eligible substitutions include:
> - relevant post secondary education such as community college, trade school, university

- training that meets the 'continuing education' training criteria for purpose of certificate renewal

6. Substitute different experience: Class II, III and IV applicants may be permitted to substitute experience as an operator in a different system, experience in a system other than as an operator, or other relevant qualifications, for certificate qualifying experience. However, the Director needs to be satisfied that such experience or qualifications are relevant to the certificate being applied for.

Examples of different experiences that may be considered are:
- experience gained working in a wastewater plant
- experience gained working in a laboratory conducting tests on drinking water or wastewater
- experience gained within a drinking water system doing electrical or mechanical maintenance, or work as a technical expert or trades person

The ratio is often 2 to 1 or 3 to 1. For example, 3 years of distribution experience would be equivalent to one year of treatment experience if applying for a higher treatment certificate.

(*See Ministry guideline for more detail*)

7. Application of part-time experience: The application of part-time experience is defined in a Ministry guideline.

Generally an operator who works in a subsystem that does not require the operator to be at the subsystem full-time but does require the operator to be available full-time, will receive one year experience credit for each year employed. However, an operator working part-time in a system requiring full-time operators will receive credit for the actual time worked.

8. Operators who worked in a system that is considered a **limited subsystem**, for one month within the 12 months before August 1, 2004, require grade 10.

9. An operator may upgrade their certificate only one class higher than the certificate they currently hold.

4.3.1 Existing Operator Certificates

Existing operator certificates are transferred into O. Reg. 128/04 as of August 1, 2004.

A valid distribution operator licence will become a distribution and supply operator certificate of the same class. This allows the operator to operate a water distribution and supply subsystem as well as a water distribution subsystem.

4.3.2 Transferability of Operator Certificates

An operator who holds one type of certificate may be deemed to hold other certificates for the purpose of being able to work in that subsystem. The following chart shows this transferability:

Table 5

Certificate Held by Operator	Certificate Operator Deemed to Also Hold
Class I to IV Water Treatment	✓ Class I Distribution certificate ✓ Class I Distribution and Supply certificate ✓ Limited Surface Water certificate ✓ Limited Groundwater certificate
Class I to IV Distribution and Supply	✓ Distribution certificate of the same class ✓ Limited Groundwater certificate
Limited Surface Water	✓ Limited Groundwater certificate
Class I to IV Distribution	Not transferable
Limited Groundwater	Not transferable

Note: The operator does not receive a certificate of the type they are deemed to hold.

4.3.3 Conditional Operator Certificate

The Director may issue a conditional operator certificate for operators holding any type and class of **municipal residential subsystem** certificate (except for an operating-in-training certificate), and for operators holding a **limited subsystem** certificate.

The Director may issue a conditional certificate if:

- the owner or operating authority that employs or has offered to employ the applicant satisfies the Director that they cannot obtain the services of an operator of the type and class required under this regulation (for example, if an owner of a Class III water treatment subsystem is unable to find an operator holding a Class III water treatment certificate), and
- the owner or operating authority gives both the applicant and the Director a written commitment to help the applicant comply with all the conditions of the subsystem, and
- the required fee is paid.

A conditional operator's certificate is valid only for the subsystem for which it has been issued. The operator cannot use it to work in another facility. The Director may impose certain conditions in a conditional certificate. The certificate expires three years after it is issued, or on an earlier date specified on the certificate, but may be renewed by the Director, if the renewal requirements are met. (See section 4.4 of this guide, Certificate Renewal below).

A grandparented operator may not apply for a conditional operator certificate (O. Reg. 128/04 Section 10 (2)). They must first pass a certification exam, and through this have their grandparented operator status removed.

Examples of when a conditional certificate might be issued by the Director are as follows:

- when a system upgrade or expansion changes the classification level of the system, and no operator employed in the system has a certificate at the new classification level of the system
- when systems are unable to hire a person with the required class of certificate.

Conditions that may be placed on a conditional certificate include, but are not limited to:

- the operator meeting specific training requirements in addition to the annual training requirements
- that technical support or operational back-up be available to the operator holding the conditional certificate
- that the operator pass a General Education Development test.

4.3.4 Operator Certificate to be Displayed

The owner or operating authority must clearly display the certificate of every operator employed by them at the operator's workplace, or if this is not practical (such as for a distribution system), at the premises from which the subsystem is managed.

4.3.5 Reciprocity

As a signatory to the Canadian Reciprocity Agreement, Ontario will recognize a valid operator's certificate secured in other provinces that signed this agreement.

4.4 *Certificate Renewal*

4.4.1 Overview

The qualifications for certificate renewal are contained in Schedule 4 of O. Reg. 128/04. As mentioned earlier, section 12 of the SDWA requires that a person operating specific drinking water systems must be certified. Contravening section 12 of the SDWA – i.e. working as an operator without holding a valid operator certificate – is an offence under the Act. An expired certificate is not a valid certificate. *Therefore it is important that operators notify the Certification Office of a change in address, and renew their certificate before it expires.*

Generally the Certification Office issues a renewal notice and application form to an operator sixty (60) days prior to the date when their certificate expires. Operators who apply for renewal, meet the renewal qualifications, and pay the required fee will receive a new certificate containing the new expiry date.

4.4.2 Renewal of Operator Certificates

Operator certificates expire every three years. To qualify for renewal, the operator must have:

a. completed the training requirements in section 29 of O. Reg. 128/04 – see Annual Training Requirements, section 4.10 of this guide. [10] (*Effective August 1, 2005*)
b. at least three months experience in the previous 36 months of working as an operator in a subsystem or related experience

> In general **related** experience includes a role in the drinking water and wastewater industry that enables a person to remain knowledgeable and current on drinking water treatment or distribution equipment and methods.
>
> For example, an operator who becomes a drinking-water supervisor, trainer or technical expert would meet the experience requirement during the time that they are actively engaged in such role.
>
> Other related experience could include experience as an electrical/mechanical or maintenance employee of the drinking water system, or as a laboratory technician or scientist who tests water.
>
> *See Ministry guideline to be available in the near future for more detail on related experience.*

c. paid the required fee.

For a conditional operator's certificate to be renewed, the applicant for renewal must also have met the conditions of the conditional certificate.

4.4.3 Re-certification/Renewal re: Grandparented Operators *(Effective May 14, 2004)*

Under the SDWA all grandparented operator certificates expire on May 14, 2006, two years from the day O. Reg. 128/04 was filed. To remain certified, all grandparented operators must pass a certification exam by May 14, 2006. This causes the grandparented status to be removed.

Grandparented operators who are 'overall responsible operators' (ORO) must pass a certification exam by May 14, 2005, in order to remain an overall responsible operator. Otherwise the owner must revoke the ORO designation. (The grandparented operator would continue to hold a valid grandparented certificate until May 14, 2006).

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[10] The Director may renew a certificate for six months even if the training requirements are not met if the Director is satisfied that the training requirements will be met at the end of the six months. At the end of the six months, if the training requirements are met, such certificate will be renewed three years from the original expiry date The Director will exercise this discretion in limited circumstances, such as an operator being ill or out of the country for an extended period.

Grandparented operator certificates that expire before May 14, 2006, may be renewed to May 14, 2006, to allow the operator to pass a certification exam, provided the grandparented operator:

- has at least three months experience in the previous 36 months of working as an operator in a subsystem, or related experience, and
- pays the required fee.

Once the grandparented status is removed through passing a certification exam, the general operator certificate renewal requirements apply.

A separate information package on grandparented operator exam preparation courses and related schedule is available through Ridgetown College at jmervin@ridgetownc.uoguelph.ca

4.5 *Re-issuance of Operator Certificate After It Expires*

If the renewal application is made within one year of the expiry date, the applicant must:

- ✓ meet the normal certificate renewal requirements,
- ✓ pay a late renewal fee in addition to the normal renewal fee.

If the renewal application is made more than one year after the expiry date, the applicant must:

- ✓ meet the qualifications in Schedule 2 for that type of Class of certificate (including pass the certification exam),
- ✓ complete the **mandatory course** referred to section 1.6 of this guide, and
- ✓ pay a late renewal fee in addition to the regular renewal fee.

4.6 *Replacement of Certificates*

The Director may issue a replacement certificate if an operator's certificate has been lost or destroyed, or if the operator's name has changed and the original certificate is returned to the Director. A fee will be charged.

4.7 *Refusal to Issue or Renew an Operator's Certificate*

The Director may refuse to issue or renew an operator's certificate if:

- ➢ any of the circumstances under which the Director can revoke or suspend a certificate under apply
- ➢ the applicant is the holder of any other water operator's licence or certificate or water quality analyst's certificate that has been revoked or suspended or that the Director is authorized to revoke or suspend
- ➢ the certificate to be renewed was revoked or suspended
- ➢ the applicant is a holder of a wastewater operator's licence under O. Reg. 129/04 that was suspended or that the Director is authorized to revoke or suspend.

4.8 *Revocation or Suspension of an Operator's Certificate*

The Director may revoke or suspend an operator's certificate, including an operator-in-training's certificate for reasons described in subsection 13 (1) of O. Reg. 128/04. The Director may issue a certificate of another type and class than the certificate suspended or revoked, providing the applicant meets the necessary qualifications.

The circumstances that might cause a Director to revoke or suspend a certificate are:

- The application was fraudulent or contained inaccurate information
- The person was discharged from employment in a drinking water subsystem for gross negligence or for incompetence, unless the person has not yet exhausted the rights of appeal available under a collective agreement[11]
- The person has worked as an operator for any length of time without being certified for that type or class of operator he or she worked as, or has lied about holding a type or class of certificate that they do not hold
- The person has previously had an operator's certificate or a water quality analyst's certificate revoked or suspended, and the Director has reasonable grounds to believe that the person is not competent as an operator
- The person previously had an operator's licence or a wastewater operator's licence issued under O. Reg. 435/93 and O. Reg. 129/04 revoked or suspended and the Director has reasonable grounds to believe that the person is not competent as an operator
- The person has failed to perform the duties of an operator-in-charge as described in section 26 of O. Reg. 128/04, or has failed to keep records as described in section 27 of O. Reg. 128/04, which has:
  - resulted in the discharge of a pollutant into the natural environment,
  - had an adverse effect on the health or safety of an individual, or
  - had an adverse effect on a process in the subsystem or the system of which the subsystem is a part
- The person has failed:
  - to exercise the level of care, diligence and skill that a reasonably prudent operator would be expected to exercise in a similar situation, or
  - to act honestly, competently and with integrity, with a view to ensuring the protection and safety of the users of the system
- The person has failed to meet or has contravened any condition that is set out in his or her certificate.

[11] If a person chooses not to appeal within the time required, it would have the same effect as having exhausted their right of appeal.

4.9 *Training Requirements*

The following describes the training requirements for operators.

4.9.1 Training Requirement - to July 31, 2005

Operators employed in a subsystem between August 1, 2004 and July 31, 2005 are required to take the 40 hours of training as required under O. Reg. 435/93 as it read on July 31, 2004. (See section 30 of O. Reg. 128/04).

4.9.2 Training Requirements - as of August 1, 2005

Certificate renewal is conditional on meeting the training requirements for operators described in Section 29 of O. Reg. 128/04.

The owner or operating authority must take reasonable steps to ensure that every operator employed in their subsystem completes the required hours of training each year, over the three years between certificate renewals.

4.9.3 Type of Training

The annual hours of training required under O. Reg. 128/04 are a minimum. The hours consist of two types of training:

- ✓ continuing education training (academic type courses and workshops involving curriculum) , and
- ✓ on-the-job-practical training (provided in the workplace and would include equipment demonstrations, health & safety within the subsystem, etc).

As well, the continuing education hours must include the **mandatory** course described in section 1.6 of this guide.

The continuing education training must be Director approved based on criteria. The criteria provided in O. Reg. 128/04 specify that the continuing education training must:

- ✓ have documented learning objectives
- ✓ be planned and provided by a qualified training provider
- ✓ include a means to verify that the participants have learned the material covered
- ✓ cover subject matter that is directly related to the duties typically performed by an operator

The on-the-job practical training must meet specific criteria in order to meet the training requirements. The criteria provided in O. Reg. 128/04 specify that the on-the-job training must:

- ✓ have documented learning objectives
- ✓ be provided by a trainer with expertise in the subject matter
- ✓ cover subject matter directly related to the duties typically performed by an operator

The full details of what constitutes Director approved continuing education training, as well as the full criteria for on-the-job practical training, will be available in a separate guideline in advance of these training requirements coming into effect on August 1, 2005.

4.10 *Annual Training Requirements*

The chart below shows the required annual hours of training. Hours of training for operators are based on the type and class of subsystem. For example, a Class 1 operator working in a Class IV system must take a total of 50 hours of training per year, or 150 hours over three years.

The continuing education hours shown below are a minimum. An operator can obtain the minimum or all of the total hours required for certificate renewal as continuing education. However, the hours shown for on-the-job practical are the maximum that can be applied to certificate renewal.

Table 6

System Class	Continuing Education	On-the-Job Practical	Total
Limited System – Ground	7 hours	13 hours	20 hours
Limited System – Surface	7 hours	13 hours	20 hours
Class I	7 hours	23 hours	30 hours
Class II	12 hours	23 hours	35 hours
Class III	14 hours	26 hours	40 hours
Class IV	14 hours	36 hours	50 hours

The annual hours of training can be averaged over the three years. This means the total training required over three years, (e.g. 105 hours for an operator working in a Class II subsystem), can be taken all in year two; or two-thirds in year one and the balance over the remaining two years and so forth. This flexibility has been provided in order to:

- ✓ enable the training to relate to the learning plan of the operator and water quality analyst (for example, a course identified in the learning plan may not be available until the second year), and
- ✓ allow for a single training event that is of a length meeting or exceeding the total hours for three years.

Part-time operators must take the full number of hours since all operators, whether they work full-time or part-time, need the same level of skills and knowledge to protect the safety of drinking water.

Operators working in more than one type and/or class of drinking-water subsystem during the same period must complete the hours of training required for the highest type and class of subsystem. Thus an operator holding two different certificates, each with a different expiry date, need only complete the training for the highest type and class of subsystem in which they work.

Operators not employed in a subsystem on the day their certificate expires, but who wish to renew their certificate, must complete the hours of training for the highest type and class of subsystem for which they are certified.

The owner or operating authority must keep records for five years of all the on-the-job practical training completed by operators in their employ. Such record should include the:

- ✓ name of operator
- ✓ date of the training
- ✓ method used for training
- ✓ name of instructor
- ✓ duration of each training session taken by such operator
- ✓ the subject(s) covered.

Operators must keep records of continuing education training in order to be able to submit such record to the Certification Administrator along with the application for certificate renewal.

4.11 *Phase-In of Training Requirements*

The training requirements will be phased in over three years, as provided for in section 30 (1) 2 of O. Reg. 128/04 as follows:

Table 7

Year Certificate Expires	Required Training for Certificate Renewal
August 1, 2005 to July 31, 2006	▪ operator must have taken 40 hours in previous year as required in O. Reg. 435/93.
August 1, 2006 to July 31, 2007	▪ operator and water quality analyst must have taken annual hours of training for one year, that meets training criteria. Example: 35 hours if working in a Class II subsystem.
August 1, 2007 to July 31, 2008	▪ operator and water quality analyst must have taken annual hours of training for two years. Example: 70 hours if working in a Class II subsystem.
On or after August 1, 2008	▪ operator and water quality analyst must have taken annual hours of training for three years each time they renew their certificate.

5 Water Quality Analyst – Certification and Certificate Renewal

5.1 *Overview*

Any water testing (analysis) prescribed by O. Reg. 170/03 must be done by a person or laboratory holding a 'drinking water testing services' licence issued by the ministry. The exception is conducting a test for the 24 operational parameters listed under subsection 2(1) of the Drinking Water Testing Services regulation, O. Reg. 248/03, (e.g. testing for chlorine

residual, turbidity, alkalinity, pH), which can be done by a qualified person. A qualified person includes a certified drinking water operator (including an operator-in-training), and a **water quality analyst**.[12]

A **water quality analyst** means a person who holds a water quality analyst's certificate issued under section 16 of O. Reg. 128/04 or who holds a conditional water quality analyst's certificate issued under section 17 of O. Reg. 128/04.

5.2 *Certification of Water Quality Analysts*

The Director will issue a water quality analyst certificate provided the applicant meets all the qualifying requirements which are as follows:

- successfully complete grade 12 or equivalent,
- pass WQA exam,
-
  - have one year of experience working in a drinking-water system performing tests on water or working in a facility that provides related experience or have experience considered equivalent by the Director, or
  - complete Director approved training related to the testing of water, and
- pay the required fee.

5.2.1 Water Quality Analyst Certificate to be Displayed

The owner or operating authority must ensure that a copy of the water quality analyst's certificate is clearly displayed at the WQA's workplace, or if that is impractical, then from the premises from which the subsystem is managed.

5.2.2 Existing Water Quality Analyst Certificate

A water quality analyst certificate issued by the Ministry before July 31, 2004 is considered a valid water quality analyst certificate under O. Reg. 128/04.

5.2.3 Conditional Water Quality Analyst Certificate

An individual may apply for a conditional water quality analyst certificate. The Director may issue a conditional WQA certificate if:

- the owner or operating authority that employs or has offered to employ the WQA satisfies the Director that they cannot readily obtain the services of a certified water quality analyst and
- the owner or operating authority gives both the applicant and the Director a written commitment that they will assist the applicant to comply with any conditions imposed on the certificate, and
- the required fee is paid.

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[12] A person does not need to be certified to take a water sample, which is a different function than conducting a water test (i.e. analysis). The expectation is that a person has been instructed on how to properly take the sample to ensure a reliable test.

A conditional WQA certificate is valid only for the subsystem for which it has been issued.

A conditional certificate expires the earlier of the date on the certificate or three years from the date it was issued. However, the Director can renew the conditional certificate if the renewal conditions have been met (See section 5.2.4 of this guide).

5.2.4 Renewal of Water Quality Analyst Certificate

Water Quality Analyst certificates expire every three years. To qualify for renewal, the WQA must have:

a. completed the training requirements set out in section 31 of O. Reg. 128/04 (Effective *August 1, 2005*) (See Training Requirements in section 4 of this guide), and
b. at least three months experience in the previous 36 months of working as a water quality analyst in a subsystem or related experience, and
c. paid the required fee.

For a conditional WQA certificate to be renewed, the applicant must also have met the conditions set out in the conditional certificate.

5.3 *Re-issuance of Water Quality Analyst Certificate after it Expires*

If the renewal application is made within one year of the expiry date, the applicant must:

- ✓ meet the normal certificate renewal requirements and
- ✓ pay a late renewal fee in addition to the normal renewal fee.

If the renewal application is made more than one year after the expiry date, the applicant must:

- ✓ meet the requirements for a new WQA certificate (i.e. pass the exam)
- ✓ complete the **mandatory course** described in section 1.6 of this guide, and
- ✓ pay a late renewal fee in addition to the renewal fee.
- ✓

5.4 *Replacing Water Quality Analyst Certificate*

The Director will issue a replacement certificate if:

- ✓ the certificate is lost or destroyed, or
- ✓ the name of the water quality name changes and the original certificate is returned to the Director, and
- ✓ the required fee is paid.

5.5 *Refusal to Issue/Renew a WQA Certificate*

The Director may refuse to issue or renew a water quality analyst's certificate if:

- ➢ any of the circumstances under which the Director can revoke or suspend a certificate under apply

- the applicant is the holder of any other certificate that has been revoked or suspended or that the Director is authorized to revoke or suspend
- the applicant is a holder of a wastewater operator's licence under O. Reg. 129/04 that was suspended or that the Director is authorized to revoke or suspend
- the certificate to be renewed is revoked or suspended under section 19.

5.6 *Revocation/Suspension of WQA Certificate*

The Director may revoke or suspend a water quality analyst's certificate for the reasons described in section 19 of O. Reg. 128/04.

The circumstances that might cause a Director to revoke or suspend a certificate are as follows:

- the application was fraudulent or contained inaccurate information
- the person was discharged from employment in a drinking water subsystem for gross negligence or for incompetence, unless the person has not yet exhausted the rights of appeal available under a collective agreement[13]
- the person has worked as a water quality analyst for any length of time without being certified, or has lied about being certified
- the person has previously had a water quality analyst's certificate revoked or suspended, and the Director has reasonable grounds to believe that the person is not competent to perform their duties
- the person has failed:
  - to exercise the level of care, diligence and skill that a reasonably prudent operator would be expected to exercise in a similar situation, or
  - to act honestly, competently and with integrity, with a view to ensuring the protection and safety of the users of the system
- the person has failed to meet or has contravened any condition that is set out in his or her certificate.

5.7 *Water Quality Analyst Training Requirements*

5.7.1 Overview

As of August 1, 2005, certificate renewal is conditional on meeting the following training requirements, which are described in section 31 of O. Reg. 128/04.

The owner or operating authority must take reasonable steps to ensure that every water quality analyst employed in their subsystem completes the required hours of training.

[13] If a person chooses not to appeal within the time required, it would have the same effect as having exhausted their right of appeal.

5.7.2 Type of Training

The annual hours of training required under O. Reg. 128/04 are a minimum. The hours consist of two types of training:

- ✓ continuing education training (academic type courses and workshops involving curriculum) , and
- ✓ on-the-job-practical training (provided in the workplace and would include equipment demonstrations, health & safety within the subsystem, etc).

As well, the continuing education hours must include the **mandatory** course described in section 1.6 of this guide.

The continuing education training must be Director approved based on criteria. The criteria provided in O. Reg. 128/04 specify that the continuing education training must:

- ✓ have documented learning objectives
- ✓ be planned and provided by a qualified training provider
- ✓ include a means to verify that the participants have learned the material covered
- ✓ cover subject matter that is directly related to the duties typically performed by a water quality analyst.

The on-the-job practical training must meet specific criteria in order to meet the training requirements. The criteria provided in O. Reg. 128/04 specify that the on-the-job practical training must:

- ✓ have documented learning objectives
- ✓ be provided by a trainer with expertise in the subject matter
- ✓ cover subject matter directly related to the duties typically performed by a water quality analyst.

The full details of what constitutes Director approved continuing education training, as well as the full criteria for on-the-job practical training, will be available in a separate guideline in advance of these training requirements coming into effect on August 1, 2005.

5.7.3 Annual Hours of Training

The chart below shows the required annual hours of training. The continuing education hours shown below are a minimum. A water quality analyst can obtain the minimum or all of the total hours required for certificate renewal as continuing education.
However, the hours shown for on-the-job practical are the maximum that can be applied to certificate renewal.

Table 8

System Class	Continuing Education	On-the-Job Practical	Total
Water Quality Analyst	7 hours	13 hours	20 hours

Water quality analysts who also hold an operator's certificate need to complete the number of hours for the highest type and class of subsystem in which they work as an operator.

A WQA holding both a WQA and an operator's certificate, who does not work as an operator, would take the number of hours shown for a water quality analyst in the chart above. In three years their operator certificate would expire, as they would not meet the experience requirement.

The owner or operating authority must keep records for five years of all the on-the-job practical training completed by water quality analysts in their employ. Such record should include the:

- ✓ name of water quality analyst
- ✓ date of the training
- ✓ method used for training
- ✓ name of instructor
- ✓ duration of each training session taken by such operator
- ✓ the subject(s) covered.

Water quality analysts must keep records of continuing education training in order to be able to submit such records to the Certification Administrator along with the application for certificate renewal.

6 Certification Examinations

6.1 *Exam Application*

In addition to meeting the experience and education requirements specific to the different operator certificates, the applicant must also pass a certification exam in order to receive a certificate.

Applicants may only write examinations one class higher than the class of certificate that they hold.

Examination application(s) can be secured from the office of the Certification Administrator. (See Section 11 of this guide for contact information).

Exam application(s) and payment(s) must be received by the office of the Certification Administrator at least four (4) weeks prior to the examination date requested. Applicants will receive an examination confirmation letter to confirm their registration and certificate eligibility requirements. Examination mark(s) will be sent by mail within 30 days of the exam date. Exam marks cannot be given over the phone.

If an applicant fails to attend a scheduled examination, without informing the Certification Office at least two weeks (10 business days) before the date of the exam, he/she will forfeit the

examination fee. Rescheduling or canceling the same exam three times will also result in the loss of the exam fee.

All applicants who have canceled scheduled examination sittings must reapply to write another exam. All applicants who forfeit examination fees must submit a new cheque along with the exam application.

6.2 *Locations*

A list of the exam dates and locations can be found on the Web site of the Certification Administrator (see Section 11 of this guide for contact information).

6.3 *Confirmation Letter*

The Certification Office will send an examination confirmation letter. This letter will confirm the following details:

- the exam to be written (i.e. WTII)
- the date and time scheduled for the exam
- location of the exam (map included)
- materials required to bring to the exam (personal photo ID and calculator)
- certificate eligibility requirements (details on the documents that need to be submitted in order to have the certificate issued upon passing the examination).

Following notice of having passed the exam (pass is 70%), operators and water quality analysts should submit the appropriate documentation related to other certificate qualifying requirements.

7 Operating Standards for Subsystems

The owner or operating authority of a subsystem is expected to ensure that every operator employed in that subsystem holds a certificate applicable to that type of subsystem, or a conditional certificate applicable to that particular subsystem.

7.1 *Overall responsible operator*

The owner or operating authority[14] must designate an overall responsible operator (ORO) to ensure that a knowledgeable, experienced staff person is available at all times to provide advice to all operators working within the subsystem, and to respond to emergencies.

[14] An operating authority is defined under the SDWA as the person or entity that is given responsibility by the owner for the operation, management, maintenance or alteration of the system. For the purpose of O. Reg. 128/04 this could be a public works department of a municipality, or a staff person assigned such responsibility by the municipality or non-municipal owner.

An **overall responsible operator** means an operator designated as overall responsible operator of a subsystem under section 23 of O. Reg. 128/04

The owner or operating authority of each **municipal residential subsystem** must designate as overall responsible operator an operator who holds a certificate for that type of subsystem and that is of the same class as or higher than the class of that subsystem. For example, the overall responsible operator of a Class III water treatment subsystem must hold a Class III or Class IV water treatment subsystem operator's certificate.

The owner or operating authority of each **limited subsystem** must designate as overall responsible operator an operator who holds a limited subsystem operator's certificate for that type of subsystem. Note: this would include certificates that are deemed to be limited subsystem certificates (see section 2.6.2 of this guide, Transferability of Operator Certificates).

To 'designate' means to appoint an operator as holding the position of overall responsible operator. It must be clear to other operators working in the subsystem, and to the ministry inspector, who the overall responsible operator is for each shift. The expectation is that the overall responsible operator would be identified either through recording the ORO's name in the daily log, through a memo that is posted, etc..

The intent of the regulation is that there be an ORO designated for a subsystem at all times. In order to achieve this goal, an owner or operating authority can designate one operator to be the ORO for particular shifts or days, and another operator as the ORO for the other shifts or days, provided there is only one ORO designated at any given time (and that whoever is designated as the ORO meets the requirements of holding a certificate for that type of subsystem and of the same class or higher than that subsystem).

The ORO may have responsibility for more than one subsystem provided it doesn't affect their ability to perform their responsibilities.

The ORO can be off-site, however he or she must be able to respond immediately and effectively to an emergency at the site.

Professional engineers without a drinking-water operator's certificate cannot be designated as overall responsible operator.

If a designated overall responsible operator holding the proper qualifications is absent or unable to act, the owner or operating authority or, if the owner or operating authority authorizes it, the overall responsible operator, may designate an operator who holds a certificate applicable to that

type of subsystem and no more than one class lower to act on their behalf (for example, if the overall responsible operator for a Class IV distribution subsystem is absent, an operator holding a Class III distribution subsystem certificate can act in their place).

Owners/operating authorities of municipal residential systems can only rely on "backup" overall responsible operators for up to 150 days in any 12-month period in a municipal residential subsystem. The Director can make an exception if the Director is satisfied that the owner or operating authority cannot reasonably hire an operator holding a class of certificate as high or higher than the class of subsystem. The Director must also be satisfied that extending the time period will not result in a drinking water hazard or a significant risk to the natural environment.

The duties of an overall responsible operator cannot be delegated to an operator-in-training, or to a grandparented operator whose designation as overall responsible operator has been revoked after May 14, 2004.

7.2 *Operator in Charge*

The owner or operating authority of each subsystem must designate one or more operators-in-charge.

An **operator-in-charge** means an operator or professional engineer who is designated as an operator-in-charge of a subsystem under section 25 of O. Reg. 128/04.

An operator-in-charge can be any operator, except an operator-in-training.

The owner or operating authority can also designate a professional engineer, who does not have an operator's certificate, as operator-in-charge. However, the owner can only rely on a professional engineer or series of professional engineers to be the operator-in-charge for up to180 days in any 24-month period.

A **professional engineer** means a professional engineer as defined in the *Professional Engineers Act.*

The owner or operating authority must ensure that records are maintained of the amount of time each operator works as operator-in-charge.

7.2.1 Duties of Operator-in-Charge

An operator-in-charge is authorized to:

- ✓ set operational parameters for the subsystem or for a process that controls the effectiveness or efficiency of the subsystem; and
- ✓ direct or instruct other operators in the subsystem to set such operational parameters.

The operator-in-charge shall:

- take all steps reasonably necessary to operate the processes within his or her responsibility in a safe and efficient manner, in accordance with the relevant operations manuals

- ensure that the processes within his or her responsibility are measured, monitored, sampled and tested in a manner that permits them to be adjusted when necessary
- ensure that records are maintained of all adjustments made to the processes within his or her responsibility, and
- ensure that all equipment used in the processes within his or her responsibility is properly monitored, inspected and evaluated and that records of equipment operating status are prepared and available at the end of every operating shift.

> The main purpose of creating an operator-in-charge (OIC) position is to ensure that operators securing a higher class of certificate have had the experience and responsibility reflected in the duties of an OIC. For example, to secure a Class III or IV certificate, the operator must have a specific number of years of experience as an OIC.

7.3 *Strikes and Lock-Outs*

During a strike or a lockout involving operators employed in a subsystem, the Director may direct that the subsystem be allowed to operate without the presence of an overall responsible operator or certified operator for that type of subsystem. However, the Director must be satisfied the system can be operated without risk to human health or the natural environment.

> To assist the Director in making such determination, the owner or operating authority must submit a 'strike plan' containing specific information. Details on the information required can be secured from the office of the Certification Administrator.

7.4 *Recordkeeping re: Operation of Subsystem*

The owner or operating authority must ensure that logs or other forms of record-keeping are available to record information about the operation of the subsystem.

Entries into such records must be made chronologically. Entries can only be made by the overall responsible operator or the operator-in-charge, or by a person authorized to do so by the owner, operating authority, overall responsible operator or the operator-in-charge. The person who makes the entry must be clearly identified on the record.

The operator-in-charge or another authorized person must record the following information on each operating shift:

- the date, the time of day the shift began and ended, and the number or designation of the shift

- names of all operators on duty during the shift
- any departures from normal operating procedures that occurred during the shift, and the time they occurred
- any special instructions that were given during the shift to depart from normal operating procedures, and the person who gave the instructions
- any unusual or abnormal conditions that were observed in the subsystem during the shift, any action that was taken and any conclusions that were drawn from the observations; and
- any equipment that was taken out of service or ceased to operate during the shift, and any action taken to maintain or repair equipment during the shift.

The owner or operating authority must ensure that all records are accessible at the subsystem for at least five years after the last entry (in the case of a book type record keeping method) or for at least five years after each entry (in the case of a loose-leaf or electronic record keeping method). Copies or summaries of the records must be given to the Director when requested.

7.5 *Operators and Maintenance Manuals*

The owner or operating authority shall ensure that operators and maintenance personnel must have ready access to the operations and maintenance manuals that contain the plans, drawings and process descriptions necessary for the safe and efficient operation of the subsystem.

8 Owner/Operating Authority Responsibilities

Owners and operating authorities have been assigned specific responsibilities under O. Reg. 128/04. The table below lists these responsibilities, and identifies when the responsibility is solely that of the owner, versus both that of the owner and operating authority.

An **owner** is defined in the SDWA as every person who is a legal or beneficial owner of all or part of the system, but does not include the Ontario Clean Water Agency where it is registered on title as the owner of the system.

An operating authority is defined under the SDWA as the person or entity that is given responsibility by the owner for the operation, management, maintenance or alteration of the system.

> An example of an operating authority is the Ontario Clean Water Agency, or the Public Works Department of a municipality, or a person assigned the responsibility described above.

Responsibilities	Owner	Op. Auth.
File an application for subsystem classification	✓	
Ensure the certificate of subsystem classification displayed in workplace	✓	✓
Ensure that every operator employed in the subsystem holds a certificate applicable to that subsystem, or a conditional certificate	✓	✓
Ensure that a copy of the certificate of every certified operator and water quality analyst in their employ is displayed at the workplace of the operator or water quality analyst, or if this is not practical, then at the premises from which the workplace is managed	✓	✓
Designate an overall responsible operator	✓	✓
Revoke overall responsible operator designation of grandparented operator if he/she fails to pass certification exam removing grandparented status by May 1, 2005	✓	✓
Designate one or more operators as operators-in-charge	✓	✓
Ensure that records are maintained of the amount of time each operator works as an operator-in-charge	✓	✓
Ensure that logs or other record-keeping mechanisms are provided to record information concerning the operation of the subsystem	✓	✓
Ensure that logs and other record-keeping methods are accessible in the subsystem for: ▪ at least 5 years after last entry was made if a book type record ▪ at least 5 years after each entry was made if a loose-leaf or electronic record kept on a continuous basis	✓	✓
Ensure that operators and maintenance personnel have ready access to operations and maintenance manuals that contain plans, drawings, and process descriptions sufficient for the safe and efficient operation of the subsystem	✓	✓
Take reasonable steps to ensure that every operator and water quality analyst in their employ complete the required annual number of hours of training	✓	✓
Retain for 5 years training records for on-the-job training for operators and water quality analysts in their employ	✓	✓

9 Fee Schedule

The fees related to the operator and water quality certification program are shown in Table 9 below. These fees come into effect August 1, 2004, except for:

- the facility classification fee and
- operator-in-training certificate fee

which come into effect August 1, 2005.

The table includes fees to be paid by:

- ✓ operators
- ✓ water quality analysts
- ✓ owners (for facility classification), and
- ✓ course providers (to have their course assessed as meeting continuing education and/or on-the-job practical training requirements).

Table 9

Fee	Drinking Water Operator Fee	Operators-in-Training		Wastewater Operator Fee	Water Quality Analyst
		Drinking Water OIT	Wastewater OIT		
Exam	$75	$30 (all 4 exams)	$30 (all 4 exams)	$75	$75
Certificate	$115	$30	N/A	$115	$115
Certificate Renewal	$115	$115	$75	$75	$115
Late Renewal	$25	N/A	N/A	N/A	$25
Replacement Certificate	$75	$75	$75	$75	$75
Facility Classification*	$150	N/A	N/A	N/A	N/A
Course Assessment**	$50 + $30 per CEU	N/A	N/A	N/A	$50 + $30 per CEU

* paid by owner ** paid by course provider

The appropriate fees must be enclosed with applications. The 'Guide to Completing MOE Certification Forms' provides further detail on making payment.

10 Preparing for Certification – Study Guides

The following pages contain a list of material to assist operators to prepare for a certification exam. Operators should refer to the *Resource Guide for Water and Wastewater Operators* for additional information on study guides, course content, trainers, etc, which can be obtained from the Web site of the Certification Administrator (see section 11 of this guide).

The *Water Treatment Need to Know Criteria* guide is intended to help trainers, supervisors and operators determine what topics to review in order to prepare for a specific certification exam. The guide indicates the level of knowledge expected for the different topics covered in the different level of certification exams.

The office of the Certification Administrator also has a video to help operators prepare to write exams. The video is titled "*Secrets to Success: How To Prepare For Operator Certification*", and is designed for operators who have not written exams for many years. It provides tips on how to study, and how to write exams. Supervisors may borrow the video from the Certification Office.

To obtain the Resource Guide, Need-To-Know guide, or to borrow the *Secrets to Success* video (all free of charge), contact the Certification Office (see section 11 of this guide).

10.1 *Study materials available through the Certification Office*

The following study materials can be obtained through the office of the office of the Certification Administrator. You can also obtain from the Certification Administrator a list of Recommended Study Aids, or secure a copy from their Web site (see Section 11 for contact information).

- Operator-In-Training Examination Study Guide $30.00

Prepared by Ontario Municipal Water Assoc. & Ministry of the Environment.
Study guide covers all four categories in one manual.

- Alberta Water & Wastewater Operations Manual Level 1 $85.00

Prepared by Western Canada Water & Wastewater Assoc.
Manual covers all four level 1 categories (WT, WD, WWT, and WWC)

- Alberta Water & Wastewater Operations Manual Level 2 $85.00

Prepared by Western Canada Water & Wastewater Assoc.
Manual covers Water Treatment and Wastewater Treatment level 2

Sample Examination Questions:

- Operator Certification Study Guide $40.00

Prepared by the American Water Works Assoc. (AWWA)
Guide covers sample questions, level 1-4, in Water Treatment & Water Distribution

- Certification Study Guide for Wastewater Treatment Personnel $50.00

Prepared by the Water Environment Federation (WEF)
Guide covers sample questions, level 1-4, in Wastewater Treatment

- Certification Study Guide for Collection Systems Personnel $50.00

Prepared by the Water Environment Federation (WEF)
Guide covers sample questions, level 1-4, in Wastewater Collection

Ministry of the Environment Study Material

- Mathematics for Water & Wastewater Operations $25.00
- Operation of Small Drinking-Water Systems (correspondence course) $80.25

California State University Correspondence Courses

- California State offers a variety of water & wastewater correspondence courses for operators and managers. Upon completion of each course you will receive a Certificate of Completion plus earn Continuing Education units (CEU's), per course. For further information contact

California State University (CSU), at (916)278-6142 or visit their website at http://www.owp.csus.edu

Additional study aids are listed on the *Recommended Study Aid* document available on the Web site of the office of the Certification Administrator. See section 11 of this guide for contact information.

10.2 *Application Forms*

When applying for exams or certificates, please ensure that all documentation, fees, and verification forms are fully completed. Verification of employment (experience forms) must be signed by an authorized representative of the employer.

Type or print all information clearly, using a pen only. Please keep a copy of all forms submitted. Application forms, supporting documents and fees are to be forwarded to the office of the Certification Administrator.

11 How To Obtain More Information

For more information, a copy of the Resource Guide, Need-To-Know guides, Forms and the Guide to Completing Certification Form, copies of O. Reg. 128/04, or to order manuals, please contact the office of the Certification Administrator:

Ontario Environmental Training Consortium
37 George Street North, Suite 206
Brampton, Ontario
L6X 1R5
Call (905) 796-2851
Fax (905) 796-8744
www.oetc.on.ca